



Proposed Policies to Increase the level of Demand Response

Energy Action Plan Update
April 24th, 2006, Sacramento, CA

Mike Messenger, CEC



Agenda for This Talk

- Present brief status report on update of Title 24 proceedings to include Programmable Communicating Thermostats
- Propose 3 new policies to increase level of price based or economic DR achieved in next 3-5 years



Title 24 Update- Requiring PCT's in all New Homes by 2008

- Potential to provide immediate and geographic specific load drops for all new homes and HBAC retrofits during emergencies.(400,000 homes /year)
- Proof of Concept “plain vanilla” PCT (including material and fabrication costs) and functional specifications have been developed for new programmable communicating thermostats (PCT's) to support one or two way communication systems.
- Preliminary analysis shows requiring PCT's is cost effective in all climate zones assuming CPP as default rate and most climate zones for CPP as voluntary.



Policy Recommendations to Increase the Level of Demand Response

Policy 1- Support continued installation of AMI systems with functionality to support dynamic rates for all CA utilities.

Policy 2- Develop performance based incentive system to encourage DR goal attainment by 2008

Policy 3- Support use of Critical Peak Pricing rates (CPP) as the default rate for residential customers with opportunity to opt out to TOU or current rates after trial period



Policy 1 -Rationale for Support of AMI System Deployment for IOU's and Municipal Utilities

- Take advantage of burgeoning interest in AMI nationwide after successes in Pennsylvania and Wisconsin and in California
- Business cases positive in CA for most utilities and opportunity to piggyback with water meters
- Additional operational benefits and value from AMI support of California Solar Initiative (AMI permits performance based incentives)



Policy 2-Rationale for Development of Performance based Mechanism to Achieve DR goals

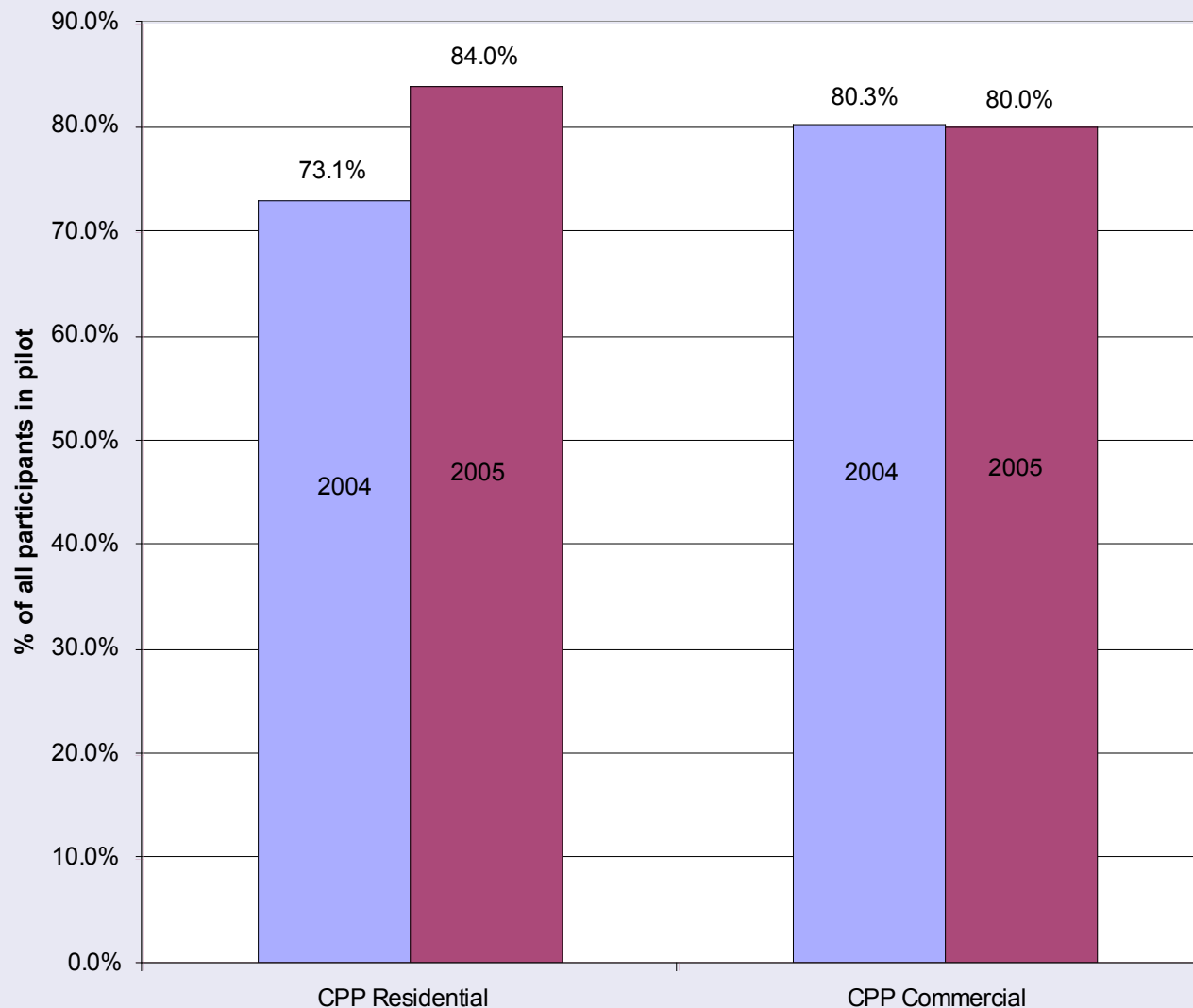
- ☐ System should compensate utilities for:
 - ☐ reducing procurement costs and or
 - ☐ Increasing system load factor and or
 - ☐ Meeting DR goals
- ☐ Consider share the savings model using in EE proceedings; consistent with recent OIR from Judge Gottstein.



Policy 3-Make Critical Peak Pricing the Default Rate for Small commercial and Residential Customers - Rationale

- Over 2/3 of the customers on the Pricing pilot;
 - Saved money by participating on a CPP rate (see Slide 8)
 - Supported use of CPP as the default rate in post pilot surveys (see Slide 9)

Fraction of Customers on CPP Rates with Lower bills in 2004 and 2005- Residential and Small Commercial



2004

2005

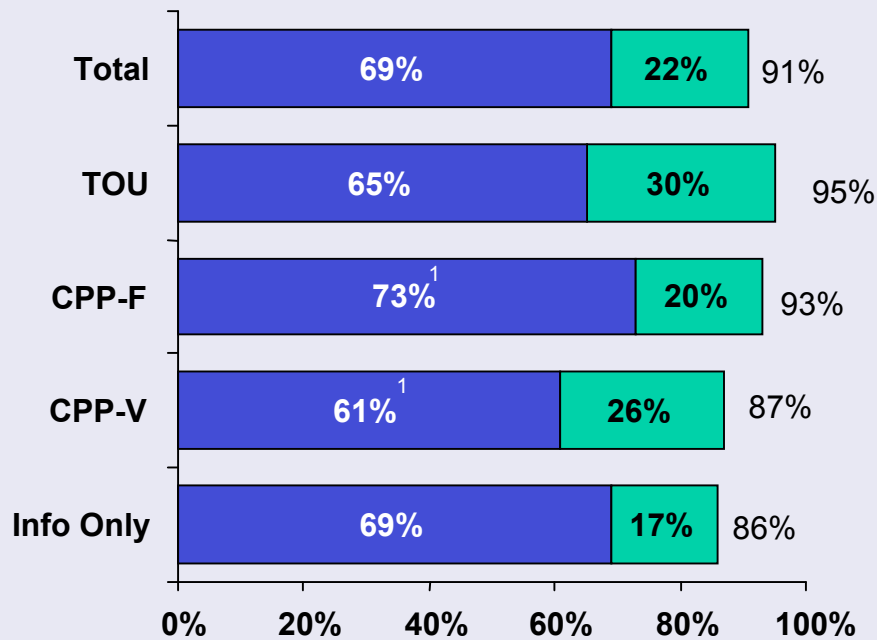
Average residential
savings= \$38/year

Average small commercial
savings-\$1300/yr

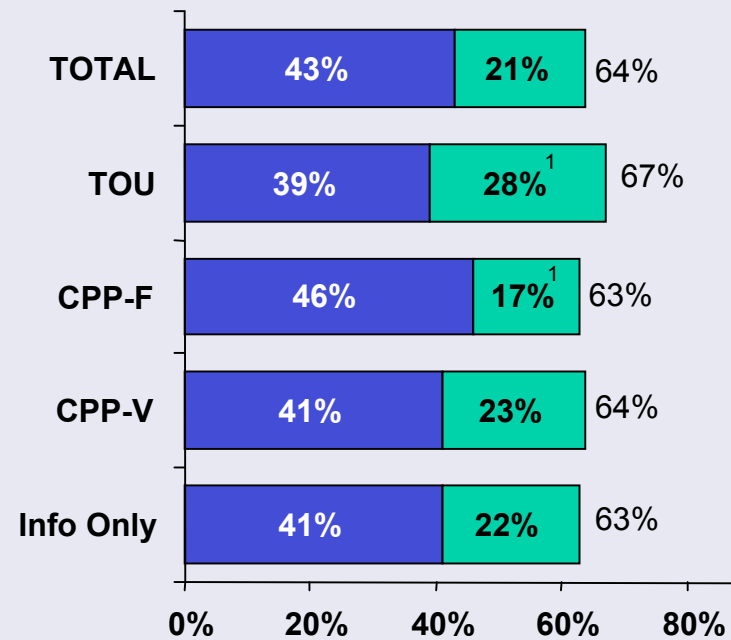
Customer Acceptance of CPP rates

Residential participants express a strong interest in having dynamic rates offered to all customers.

Should dynamic rates be offered to all customers?



Should all customers be placed on a dynamic rate and given an option to switch to another rate?



■ Definitely
■ Probably

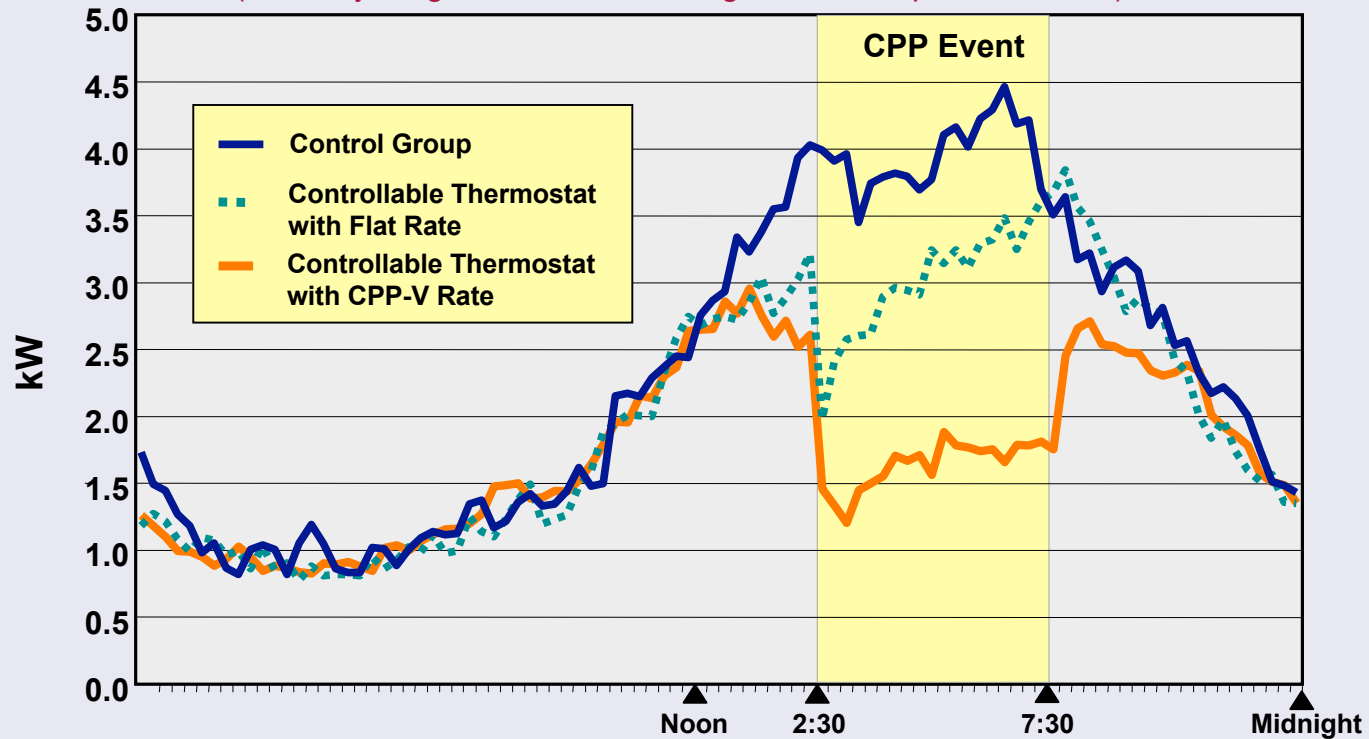
Source: Statewide Pricing Pilot: End-of-Pilot Customer Assessment, December 2004, Momentum Market Intelligence.

CPP rates – Load Impacts


Residential Response on a typical hot day

Control vs. Flat rate vs. CPP-V Rate

(Hot Day, August 15, 2003, Average Peak Temperature 88.5°)




Source: Response of Residential Customers to Critical Peak Pricing and Time-of-Use Rates during the Summer of 2003, September 13, 2004, CEC Report.



Policy 3- Make CPP the Default Rate Rationale...(continued)

- Use of Default CPP strategy will increase fraction of customers on CPP rate from 10-15% (opt in) to 60-75% (opt out) and thus level of DR. (Increases DR MW achieved by factor of 4: up to 2000 MW in CRA report)
- 80% to 90% of customers in the SPP pilot report they prefer CPP rates (over old rates) after they have had the time to adjust/ experience the new rates. Need at least a 3-6 month trial period to ensure low drop out rate.



Policy 3- Make CPP the Default Rate for all Classes- (continued)

- Customers report they prefer CPP rates because they :
 - Save energy and money on their bills,
 - Have more control over their energy bill, and
 - Contribute to increasing environmental quality by saving energy on peak
- Disadvantages of Voluntary CPP rates
 - Lower levels of overall participation
 - Structural winners/free riders who join produce lower levels of peak reduction



Summary Recommendations


- Policy 1- Support continued deployment of AMI at investor owned and extend policy to municipal utilities
- Policy 2-Support exploration of a new performance based mechanism to support attainment of DR goals
- Policy 3- Make Time Differentiated Rates the Default rate for all Classes
 - Direct all utilities to file time differentiated rates as the default (with Opt Out) rate in next rate design proceeding (including in the current PG&E proceeding) for all classes and or
 - Make the CPP rate the “rebuttable presumption” default rate in all rate design proceedings unless utilities or other parties make a strong showing that the time differentiated rates are not fair and reasonable compared to other alternative rates and/or
 - Direct staff to work with a willing utility to jointly develop a default CPP rate for small customers and strategy outside of hearing process.
- Thanks for your time//Questions ????



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Back up Slides if more information is asked for needed on key slides

- DR Goals details, definitions, Roll out options, DR timelines




Keys to Implementing CPP as a Default Rate-

- Well orchestrated customer education campaign before and during trial period is required to minimize risk of customer backlash
- Legislative changes may be required to reach all customers and there may be other rate design options to achieve the default policy
- Billing system administrator must anticipate problems with new rates via enhanced quality control systems



Options for CPP Rollout/ Educational Campaign/Rate Design

- CPP rates with credit/surcharge to ensure customer cost is more than existing maximum revenue cap for delivering the first two tiers of energy use, up to 130%.
- CPP rates with bill protection for 1 year – bill is lowest of total charges based on current rate and CPP rate
- CPP with 3-6 month trial and opt in choice at the end-billing analysis presented to inform their choice-
- CPP rates allowed by legislative fix
- New rate design to separately recover total charges for first two tiers of energy use and use CPP rates for remainder of revenues



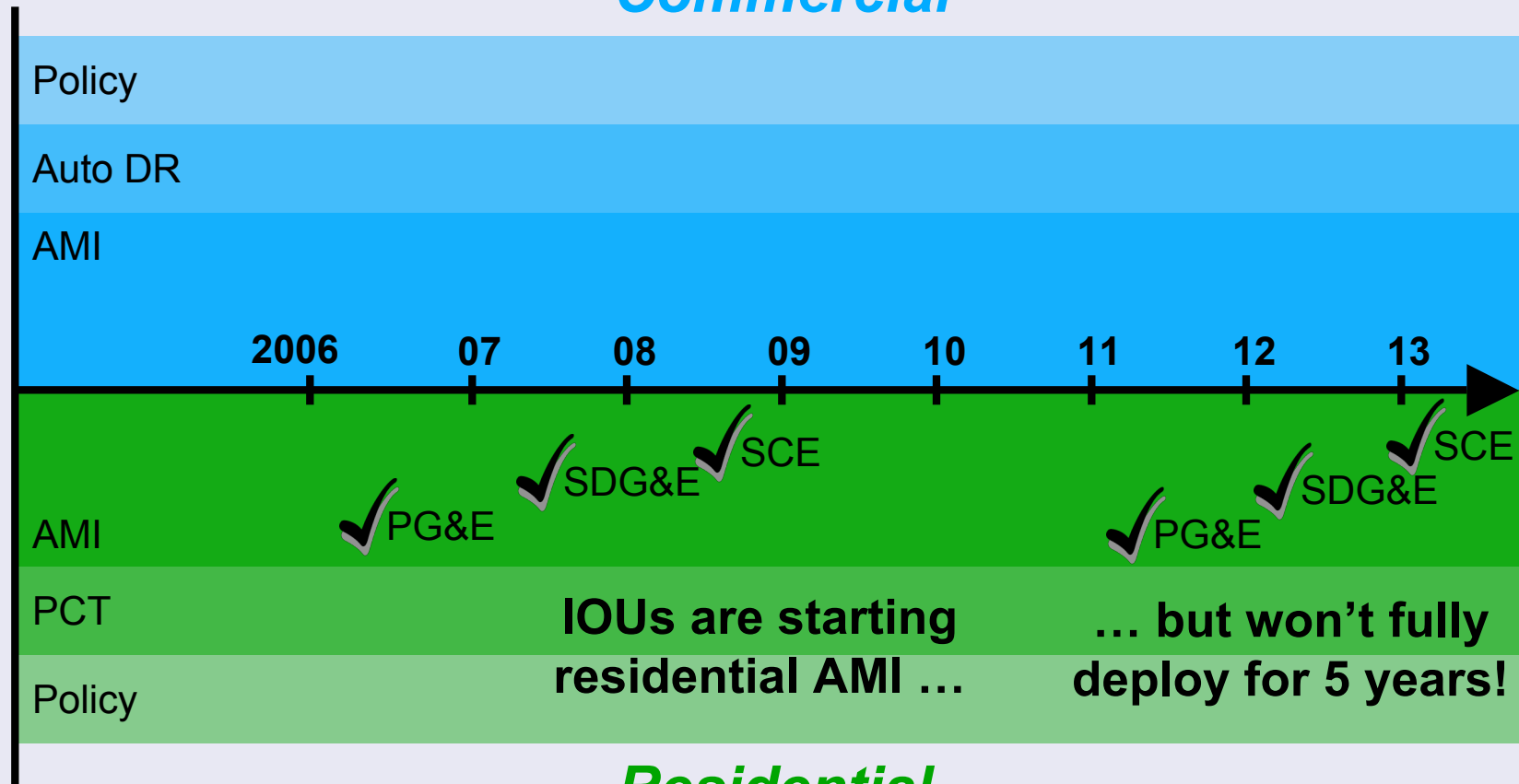
Policy 3- Make CPP the Default Rate...Rationale (continued)

- The estimated peak-energy reduction for residential customers on fixed period CPP tariffs during on peak event days was 13% (7.6 % to 15.8% depending on climate zone);
- The estimated energy reduction for residential customers with high energy usage (<600kWh per month), central A/C, and enabling technology was 16 to 27%; see next slide for example

Future DR Timeline

>200 kW, ~20,000 meters, ~8 GW of A/C

Commercial



Residential

<200 kW, ~11,000,000 meters, ~8 GW of A/C

Future DR Timeline

